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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/525,505 03/15/00 CHOI

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EXAMINER

QUARTERMAN, K

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 09/26/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/525,505

Applicant(s)

CHOI ET AL.

Examiner

Kevin Quarterman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 15 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 25 September 2000 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-10 and 15-16, drawn to a field emission display, classified in class 313, subclass 496.
- II. Claims 11-14 and 17, drawn to a method of fabricating a field emission display, classified in class 445, subclass 24.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the field emission display can be made by cutting and pulverizing carbon fibers to make the emitter, instead of screen-printing an emitter paste of a mixture of electron emitting material, magnetic material, and other additives.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

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5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Craig Gelfound on 20 September 2001 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-10 and 15-16. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-14 and 17 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: In line 10 on page 8 of the specification, reference character "22" has been used to denote carbon fiber components. Reference character "22" has been removed from the drawings in applicant's corrected drawings filed 25 September 2000. Correction is required.

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9. Applicant is required to submit a proposed drawing correction in reply to this Office action. However, formal correction of the noted defect can be deferred until the application is allowed by the examiner.

Specification

10. The disclosure is objected to because of the following informalities: The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

11. The following title is suggested: --FIELD EMISSION DISPLAY WITH ELECTRON EMISSION MEMBER AND ALIGNMENT MEMBER--.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 2 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14. Claim 2 states "an electron emission member having a longitudinal dimension" in lines 15-16 of the claim. Claim 16 states "the electron emission member comprises a longitudinal dimension" in the first two lines of the claim. It is unclear as to what the "longitudinal dimension" is. The term is not clearly defined in the claims.

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15. Claim 16 also states "the electron emission member...is aligned by the electron emission member" in the first three lines of the claim. It is unclear as to whether or not the electron emission member aligns itself.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 1-10 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (USPN 5595519) in view of O'Boyle (USPN 5708327).

18. Regarding claims 1-2 and 15-16, Figure 3 of Huang shows a field emission display comprising first and second substrates (10, 24), a cathode (12) disposed on the top surface of the first substrate, an anode (22) disposed on the bottom surface of the second substrate, a phosphor screen (20) formed on the bottom surface of the anode, and an emitter (14) formed on the top surface of the cathode.

19. Regarding claims 3, 5, 7, and 9, the Examiner takes Official Notice that electron emission elements formed of carbon fibers or graphite are well known in the art.

20. Huang discloses the claimed invention except for the emitter having an alignment member of a magnetic material.

21. O'Boyle, in the analogous art of flat panel displays, teaches a flat panel display device comprising magnet field emitter elements. O'Boyle teaches the emitter elements

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include a ferromagnetic material for focusing the electrons emitted from the emitter elements (Abstract).

22. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide emitter of Huang with a magnetic material, as taught by O'Boyle, for aligning the electron emission element.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rasmussen, USPN 6224730, discloses a field emission display having a black matrix material. Tuck et al., USPN 6097139, disclose field emission materials and devices. Xu et al., USPN 5872422, disclose carbon fiber-based field emission devices. Zimmerman, USPN 5892323, discloses the structure of field emission displays. Uemura et al., USPN 6239547, disclose an electron-emitting source having carbon nanotubes.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (703) 308-6546. The examiner can normally be reached on M-F (8-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Kevin Quarterman
Examiner
Art Unit 2879

kq 
September 21, 2001


Nimesh Patel
Supervisory Patent Examiner
Art Unit 2879